

Claims:

1. A nerve regeneration tube for reconnecting nerve ends, the tube formed of a single sheet of resorbable sidewall material consisting essentially of collagen sheet material having a compact, smooth outer barrier surface so as to inhibit cell adhesion thereon and act as a barrier to prevent passage of cells therethrough, the sheet material further having a fibrous inner surface opposite the smooth barrier surface, said tube having an inner diameter of about 0.5-5mm, said tube having opposite ends into which ends of nerves inserted for reconnection and regeneration of said nerves.

2. The tube of claim 1, wherein said sidewall is comprised of a mixture of Type III and Type I collagen.

3. The tube of claim 2, wherein said mixture contains about 1-10% Type III collagen and about 90-99% Type I collagen.

4. The tube of claim 3, wherein said mixture contains about 1-5% Type III collagen and about 95-99% Type I collagen.

5. The tube of claim 1, containing a filling material comprised of Type I collagen, Type IV collagen, or a mixture thereof.

6. The tube of claim 5, wherein the filling material is comprised of collagen fibers having a substantially longitudinal orientation with respect to said tube.

7. The tube of claim 5, wherein said filling material is a mixture of Type I collagen and Type IV collagen.

8. The tube of claim 7, wherein the Type I collagen and the Type IV collagen of said filling material is in a ratio of about 1:1 by weight.

9. The tube of claim 5, wherein said filling material further includes a nerve growth stimulant, nerve growth factor or a mixture thereof.

10. The tube of claim 9, wherein said filling material contains laminin as a nerve growth stimulate.

11. The tube of claim 1, wherein said sidewall is derived from collagen membrane tissue.

12. The tube of claim 11, wherein said membrane tissue is peritoneal tissue.

13. A nerve regeneration tube for reconnecting nerve ends, the tube formed of a single sheet of a resorbable sidewall material comprising collagen material having a compact, smooth outer barrier surface so as to inhibit cell adhesion thereon and act as a barrier to prevent passage of cells therethrough, the sidewall of the tube further having a fibrous inner surface opposite the smooth barrier surface, said tube having an inner diameter of about 0.5-5mm, said tube having opposite ends into which ends of nerves are inserted for reconnection and regeneration of said nerves.

14. The tube of claim 13, wherein said collagen membrane tissue is peritoneal membrane tissue.

15. A method of producing a nerve regeneration tube as claimed in claim 1, comprising:

a) providing a sheet of collagen material having a compact, smooth outer barrier surface so as to inhibit cell adhesion thereon and act as a barrier to prevent passage of cells therethrough, and a fibrous surface opposite the smooth barrier surface; and

b) forming said sheet into a tube having a sidewall with said compact, smooth outer barrier surface oriented outwardly, said sidewall having an inner surface comprised of said fibrous surface opposite said smooth barrier surface.

16. The method of claim 15, wherein said sheet of collagen material has two opposite side edges, and the two side edges of said sheet are brought together to form said tube from said sheet.

17. The method of claim 16, further including a step of joining said two side edges together to form said tube from said sheet.

18. A method of producing a nerve regeneration tube, comprising:

a) providing a sheet of collagen material having a compact, smooth outer barrier surface so as to inhibit cell adhesion thereon and act as a barrier to prevent passage of cells therethrough, and a fibrous surface opposite the smooth barrier surface; and

b) forming said sheet into a tube having a sidewall with said compact, smooth outer barrier surface oriented outwardly, said sidewall having an inner surface comprised of said fibrous surface opposite said smooth barrier surface;

wherein said sheet of collagen material has two opposite side edges, and the two side edges of said sheet are brought together to form said tube from said sheet;

further including a step of joining said two side edges together to form said tube from said sheet; wherein the two side edges are joined together by sutures or adhesive.

19. The method of claim 15, wherein said sheet is formed into said tube with a filling material in said tube comprised of Type I collagen, Type IV collagen or a mixture thereof.

20. The method of claim 15, wherein said sheet has two opposite sides which are overlapped to form said tube.

21. The method of claim 20, wherein said sheet is formed into said tube with a filling material in said tube comprised of Type I collagen, Type IV collagen or a mixture thereof.

22. The nerve regeneration tube of claim 1, having a length of about 10-100mm.